

WHAT IS CLAIMED IS:

1. Control device for a wireless communications network,

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comprising a calculator of quantities related to attenuations measured between mobiles and base stations, and/or to the signal to interference and noise ratio threshold,

and a decision device with regard to the processing of new candidate mobiles, this
10 device operating conjointly with the calculator according to a predefined mechanism,

characterised in that the said mechanism comprises:

- a load calculation function for each mobile, and

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- an evaluation of a working condition, representing the feasibility of the servicing of mobiles by a station.

2. Device according to Claim 1, characterised in that the working condition relates to
20 the summed load due to the mobiles served by a station in question.

3. Device according to Claim 1, characterised in that the load calculation function
comprises, for a mobile, the summing of the inverses of the attenuations of the adjacent
stations, the result being multiplied by an expression related to the threshold of the
25 signal to interference and noise ratio, and by the attenuation at the server station.

4. Device according to Claim 1, characterised in that it comprises storage of a current
value of the summed load, and in that the said mechanism operates incrementally by
calculating the load of a candidate mobile, and updating the summed load, in order to
30 determine whether the mobile is admitted or not, by comparing the summed load with a
threshold.

5. Device according to Claim 1, characterised in that the calculator is provided with a function capable of evaluating a prior uplink budget condition (UBC), compared with a threshold budget value (UBC),

and in that the mechanism used by the decision device first of all invokes the said
5 function of evaluation of the prior condition, and rejects the candidate mobile if this condition is not satisfied.

6. Device according to Claim 5, characterised in that the prior condition comprises, for a mobile, the calculation of its maximum power, divided by an expression related to the
10 threshold of the signal to interference and noise ratio, and by the attenuation at the server station.

7. Device according to Claim 5, characterised in that the working condition comprises a threshold value, established in correspondence with the said threshold budget value
15 (UBC).

8. Device according to Claim 1, characterised in that it comprises a second mechanism capable of cooperating with the calculator in order to evaluate, for a given station, a non-congestion criterion, and a second decision device, capable of modifying the
20 mobile rates in order to remain within the field of the congestion criterion.

9. Device according to Claim 8, characterised in that the second mechanism comprises, for each mobile, the calculation of its signal to interference and noise ratio threshold, and then the calculation of an expression related to this signal to interference and noise
25 ratio threshold, and next the invocation of the load calculation function with these values, and then the calculation of the summed load due to the mobiles served by the station in question, this summed load being compared with a threshold.

10. Device according to Claim 8, taken in combination with Claim 5, characterised in
30 that the second mechanism comprises, for each mobile, a calculation of its signal to interference and noise ratio threshold, and then the calculation of an expression related to this signal to interference and noise threshold, and next:

- the invocation of the function capable of evaluating the prior uplink budget condition (UBC), compared with a threshold budget value (UBC), the mobile concerned being rejected if this prior condition is not satisfied,

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- for the mobiles not rejected, the invocation of the load calculation function with the aforementioned values, and then the calculation of the summed load due to the mobiles served by a station in question, this summed load being compared with a threshold related to the threshold budget.

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11. Control method for a wireless communications network comprising the steps of :

a. calculating a load for each mobile from quantities related to attenuations measured between mobiles and base stations, and/or to the signal to interference and noise ratio threshold,

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b. from the loads calculated at step a, evaluating a working condition, representing the feasibility of the service of mobiles by a station,

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c. deciding on the treatment of new candidate mobiles from step b.

12. Method according to Claim 11, characterised in that the working condition of step b relates to the summed load due to the mobiles served by a station in question.

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13. Method according to Claim 11, characterised in that step a comprises, for a mobile,

- summing the inverses of the attenuations of the adjoining stations,

- multiplying the result by an expression related to the signal to interference and noise signal ratio, and by the attenuation at the server station.

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14. Method according to Claim 11, characterised in that step b comprises storing a current value of the summed load and, during a new iteration of the method for a candidate mobile, step a comprises calculating the load of the candidate mobile, step b comprises updating the summed load and comparing the summed load with a threshold
5 in order to determine whether or not the mobile is admitted at step c.

15. Method according to Claim 11, characterised in that step a comprises first of all evaluating a prior uplink budget condition (UBC), compared with a threshold budget value (UBC), and rejecting the candidate mobile if this condition is not satisfied.

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16. Method according to Claim 15, characterised in that the prior condition of step a comprises, for a mobile, the calculation of its maximum power, divided by an expression related to the signal to interference and noise ratio, and by the attenuation at the server station.

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17. Method according Claim 15, characterised in that the working condition of step b comprises a threshold value established in correspondence with the said threshold budget value (UBC).

20 18. Method according to Claim 11, characterised in that steps a to c comprise evaluating, for a given station, a non-congestion criterion, and in that step c comprises modifying the mobile rates in order to remain within the congestion criterion field.

25 19. Method according to Claim 18, characterised in that step a comprises, for each mobile, calculating its signal to interference and noise ratio threshold, and then calculating an expression related to this signal to interference and noise ratio threshold, and calculating the load on each mobile with this expression, and in that step b comprises calculating the summed load due to the mobiles served by a station in question and comparing this summed load with a threshold.

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20. Method according to Claim 18, taken in combination with Claim 15, characterised in that step a comprises, for each mobile, calculating its signal to interference and noise

ratio threshold and then calculating an expression related to this signal to interference and noise ratio threshold, and then:

- 5 - evaluating the prior uplink budget condition (UBC), with respect to a threshold budget value (UBC), the mobile concerned being rejected if this prior condition is not satisfied,
- for the mobiles which are not rejected, calculating the loads from the calculated expressions, the summed load due to the mobiles served by a station in question being calculated and compared with a threshold related to the threshold budget at step b.